

WHAT IS CLAIMED IS:

1. An apparatus for adding red light to a polarized light system comprising:

a first light source and a second light source;

a polarizing beam splitter for combining S-polarized-light from said first light

5 source and P-polarized light from said second light source;

a first multi-layer filter means for rotating the polarization state of the green
light from said first light source to the P-polarization state;

a second multi-layer filter means for rotating said first light source red light to
the P-polarization state and said second light source red light to the S-polarization

10 state; and

a reflective cleanup polarizer for reflecting P-polarized-light back to respective
said first and second light source and passing S-polarized-light for further processing.

2. The apparatus as claimed in claim 1, wherein said reflective cleanup polarizer
output light is a red light from said second light source and a cyan light from said first

15 light source.

3. The apparatus as claimed in claim 1, wherein said first and second multi-layer
filter means is a plurality of plates that rotate 90 degrees the plane of polarization to
convert the S-polarized light component into the P-polarized component.

4. The apparatus as claimed in claim 1, wherein said first and second multi-layer
20 filter means is a half wave retarder film that rotate 90 degrees the plane of polarization
to convert the S-polarized light component into the P-polarized component.